

determine the true focal length, a computation or a look-up table may be used, block 635.

In one embodiment, the calculation is as follows:

sl CI A1 cond
$$TFL = FL + (FL^2 / \text{Focus} - FL)$$

where the TFL represents the true focal length, FL represents the focal length input and focus is the Focus value input.

Please replace the paragraph starting on page 18, line 13 with the following paragraph:

Using mathematical equations may be sufficient for some simple lenses.

A2
sl CI
However, very complex lenses, lenses that are of special design, or even lenses that are out of alignment or unstable may require a measurement and mapping of basic lens properties from which look-up tables may be generated. This may occur, for example, when a particular type of lens and camera combination is required or some photography has been already shot with a particular type of lens in camera that was not in perfect condition. Furthermore, it is fairly common for the markings on a lens to be slightly off. For instance, the marks to indicate focus setting on a lens can be off by enough to cause an object to be out of focus if one were to only go on the lens markings and not look through the viewfinder. Even some lenses that are considered in "perfect" functioning condition simply do not operate according to the normal optical equations. There are a number of lenses, particularly zoom lenses and those designed for microscopic or macroscopic whose design is fundamentally non-linear. In these cases, changing lens attributes such as focus or the focal length (on a zoom lens) have unpredictable results. Thus, some mechanism needs to exist to adjust the recorded values so the values correspond to the true optical properties of the lens. A look-up table, for example lookup table 637, provides a mechanism for incorporating those lens peculiarities into the invention's calculations to correct for these abnormalities.

Please replace the paragraph starting on page 20, line 1 with the following paragraph:

A3
sl CI
Thus, in one embodiment, the following computation is performed to determine the correct horizontal and vertical field of view.

slc3 A3
Vfov = $2 * (\tan((Ap/Ar)/2), TFL)$

Hfov = $2 * (\tan(Ap/2), TFL)$

Please replace the paragraph starting on page 20, line 15 with the following paragraph:

In one embodiment, the clips are positioned according to the following equation:

Clip Pos = $(TFL = 2.54 / Ap)$

Where Clip Pos represents the reference clip position in feet from the camera position, TFL represents the true focal length, and Ap represents the film gate aperture size.

Please replace the paragraph starting on page 21, line 1 with the following paragraph:

slc4
The focus 605 and true focal length are also used to determine three-dimensional markers, such as scale and position 650, with respect to displayed image and lens characteristics. The hyper focal distance 660 also is used. In one embodiment, the markers are placed in accordance with the following equation:

Marker Pos = $(TFL = 2.54 / Ap)$

IN THE DRAWINGS

Changes have been made in red ink to Figure 6a for consideration by the examiner.